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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/473,012	10/01/99	ARMIROLI P	1948-4628

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EXAMINER	
NGUYEN, T	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 10/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)

1- File Copy

Office Action Summary

Application No.	Applicant(s)
09/473,012	Armiroli et al
Examiner	**Art Unit**
Nguyen, Tran N	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Aug 17, 2001* .

2a) ☒ This action is **FINAL.** 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-30* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Response to Arguments

2. Applicant's arguments filed on 1/24/01 have been fully considered but they are not persuasive.

Regarding rejection under 35 USC 112, 2nd paragraph, the applicant argues that the Examiner fails to provide sufficient reasoning as why the claims are unclear when read in light of specification. Furthermore, as stated by the Applicant, "while one may use aluminum or other metallic material less rigid than magnet for the strip, in the applicant's preferred embodiment and consistent with the Applicant's manufacturing tolerances, the strip is glass fiber." (Remark, page 7). The applicant additionally states that once the permanent magnetic material is selected for the claimed invention, an artisan can easily clearly and precisely select a material for the strip that is less hard to the chosen magnet material (Remark, last line of page 7 to first paragraph of page 8).

In response to the argument, the Examiner would like to address the following:

Even though the hardness of permanent magnet material is known. However, permanent magnet material is categorized into various types. Each of permant-magnet material type

comprises a different magnetic composition which has a different hardness. In other words, various magnet materials have different levels of hardness.

There are at least two general permanent-magnet material types: solid-alloy permanent-magnet material and powdered/sintered permanent-magnet material. Those skilled in the art would know that the later is less hard then the first. Within powdered/sintered permanent-magnet material there are various compositions of bonded permanent-magnet particles and other metallic materials. For example: a primary phase of a hexagonal ferrite containing "A", wherein "A" is Sr, Ba or Ca, and Co and "R", wherein "R" is at least one element selected from the group consisting of rare earth permanent-magnet elements. Thus, selections of elements "A" and "R" and their quantities would determine the hardness of that particular powder magnet composition. This makes the hardness levels of powder magnet compositions to be different from one another. One very well-known powder magnet type is plastic magnet material that typically has ferrite mixed in synthetic resin. A plastic magnet is known for its less-hard and resilient property. Thus, a plastic magnet is less hard than the solid-alloy permanent-magnet material.

Because the claimed language does not specifically define the magnet material, an artisan may as well select a plastic magnet material for the strip. The strip made from plastic magnet material *IS* less hard than the magnet which argumentatively made of solid-alloy permanent-magnet material. Furthermore, because the claimed language does not specifically recite or define the permanent-magnet material of the claimed alternator's magnets, an artisan, unlikely but just for the sake of argument, could select plastic magnet material to fabricate the claimed alternator's

magnets, then select a nonmagnetic material such as aluminum or stainless steel to fabricate the strips. These choices of materials raise a questionable issue whether the plastic magnet or the nonmagnetic strip made of aluminum (or stainless steel) less hard than the other. This brings to another question: what is the finite definition of the term "less hard"? The term is a relative term and indefinite if without a specific and finite comparison.

The Examiner concurs with the applicant that the specification *discloses* the material of the strip is generally a nonmagnetic material, specifically a glass fiber nonmagnetic material. Curiously, it appears that the Applicant somewhat hesitates to clearly set the limitations for the strip's material to be a nonmagnetic material. The Examiner could not understand what reason(s) preventing the Applicant from reciting that the strips made of nonmagnetic material. The Examiner understands that the applicant's intentions/interest is to keep the possible broadest claimed language for the present invention. However, the recitations of the claims have to be definite.

Simply reciting "the strip being produced from a material which is less hard than the magnet" does not *distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.* This would yield a possibility of infringement in a patent. Again, the Examiner reminds the applicant that although the claims are interpreted in light of the specification, *limitations from the specification are not read into the claims*. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). According to the MPEP, "Office personnel are to give claims their broadest reasonable interpretation in light of the supporting

disclosure. > In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969), In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Regarding the rejection under 35 UCS 103, the applicant argues that Ralagy does not teach a groove (25) but rather an undercut (25) belongs to the groove which is in the plate (15) not on the claw pole (Remark, page 11 lines 11-12).

In response to this argument, first of all the applicant's attention is drawn to figure 2C of Ralagy. Pictorial reference number (25) is read as a groove which is an area having a cut out or an undercut to form a furrow, a channel or a notch for accommodating the strip (35) which is interposed between a face of the magnet and the groove. The applicant identifies Ragaly's feature (25) is an undercut belongs to the groove. Thus, it is understood that the so-called "undercut" is a portion of the groove. Thus, Ralagy still teaches a groove for accommodating the strip being interposed between a face of the magnet and the groove, because the undercut is part of the groove. The profile of the groove, with or without an undercut, is irrelevant because the claimed language does not recite the specific profile or configuration of the groove.

Furthermore, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the

art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this instant case, the Examiner's position is clearly NOT body incorporation between Ragaly's and XP'444 claw-pole rotors, but rather applying the Ragaly's teaching of forming grooves to accommodate the strip to fasten the magnet in the XP'444 rotor in order to ensure the magnet attached to the claw pole for a high rotation rate from greater centrifugal force (taught by Ragaly).

Regarding the argument that the groove is located in the pole plate instead in each claw pole, the recitation in the claims *"the two pole pieces having interlaced poles, the poles including grooves profiled along an axis*" is understood as axial grooves are formed in the pole. Ragaly teaches the groove (25) formed in the plate (15) at the portion between two adjacent poles (17) (fig 2C-3A-C). This portion is the root portion of the claw pole. Thus, the Ragaly's groove is broadly read as being formed in the pole and the groove profiled is along the axis. The Examiner understands that the applicant does not agree with the Examiner's interpretation of the claimed language. However, according to the MPEP, during patent examination the Examiner is obligated to give the broadest reasonable interpretation consistent with the specification because the Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) (emphasize added).

For the sake of argument, suppose that the claimed language were written "*the poles including axial grooves profiled substantially along peripheral sides of each claw pole body,*

wherein the magnet is engaged in grooves of two interlaced claw poles" then this recitation would be clearly distinct the Ragaly's groove feature from the claimed invention's groove feature, since the Ragaly's groove is only profiled in the root portion of the pole not along the along peripheral sides of each claw pole body.

Regarding the amended claims 12 and 27, the amendment is clearly to only correct grammatical error in the language of the claims. This grammatical issue has correctly interpreted in the rejection against claims 12 and 17. To elaborate this point, the applicant's attention is drawn to Ragaly's fig 2C which shows that the claw-pole rotor of the alternator having 3 magnets associate with respective 3 strips. That is the claimed language "a plurality of magnets and a plurality of strips, wherein at least two of the plurality magnets associated with respective strips " is read as the alternator having plural magnets and plural strips, wherein two or more magnets associate (the term "associate" is read as "related with" or "connect" or "attach") with respective plural strips. Again, this subject matter is shown in fig 2 of Ragaly ref.

As stated above, the amendment for claims 12 and 27 only corrects grammatical issue of the claimed language, which has already been correctly interpreted in the rejection of the previous office action. The amendment does not further limit the subject matter in the claims or raise any new issue in the claims. *Thus, all claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114.* Accordingly, ***THIS ACTION IS MADE FINAL*** *even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114.* See MPEP § 706.07(b). The

applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a) A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The following is the same rejection as in the previous Office Action included herein.

Claim Rejections - 35 USC § 112

3. **Claims 1-30** are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 16 and 30, the recitation "the strip being produced from a material which is less hard than the magnet" is indefinite because the clause "a material is less hard than the magnet" does not clearly cite any metes and bound for the limitations. In other words, with the recitation, one skilled in the art would not ably to figure out what kind of material, i.e., nonmetallic or metallic material, if it is metallic should it be magnetic or nonmagnetic material that

has certain characteristics which make the material less hard than the magnet. Thus, with this recitation, one skilled in the art would not ably to figure out or determine whether there is a patentable infringement or not. *According to MPEP section 2171*, two Separate Requirements for Claims Under 35 U.S.C. 112, Second Paragraph:

(1) the claims must set forth the subject matter that applicants regard as their invention; and

(2) *the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.* (Emphasis added).

Other claims included in this rejections due to their dependencies from the independent claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-4, 12-19 and 27-29** are rejected under 35 U.S.C. § 103(a) as being unpatentable over XP-000726444 (hereafter XP'444), in view of Ragaly, EP 0837-538-A.

XP'444 discloses an alternator (as shown in figs. 1-2) comprising: two claw-pole pieces (30, 32) interlacing, the claw pole having a groove (30C, 32C), wherein the claw pole's groove accommodating at least one magnet (54). XP'444 however does not disclose a strip interposed

between one face of the magnet and the groove, wherein the strip covers over the magnet's circumferential face that is oriented in a direction opposite to the alternator's shaft.

Ragaly disclose an alternator having a plurality magnet embedded into the pole piece of the rotor, wherein the claw pole's groove (25) accommodating at least one magnet, and a strip (35) interposed between one face of the magnet and the groove, wherein the strip covers over the magnet's circumferential face that is oriented in a direction opposite to the alternator's shaft.

Thus, it would have been an obvious matter of engineering design choice at the time the invention was made to modify the XP'444 alternator by providing a strip to interposed between one face of the magnet and the groove, as taught by Ragaly, because this would provide a means to firmly restrain the magnets in position against the centrifugal force.

Regarding the material of the strip, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select glass fiber embedded in pre-impregnated plastic since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin, 125 USPQ 416.*

6. **Claims 5-8 and 20-23** are rejected under 35 U.S.C. § 103(a) as being unpatentable over XP'444 and Ragaly, as rejected in the rejection against the base claims, and in view of level of ordinary skill of a worker in the art.

The combination of the XP'444 and Ragaly refs discloses the claimed invention, except for the added limitations of two strips interposed opposite surfaces of the magnet, as recited in

claim 5, or the groove has an U-shaped profile, as recited in claim 6, or a V-shaped profile, as recited in claims 7-8.

Regarding the two strips interposed opposite surfaces of the magnet, the prior art combination does disclose a strip covering the magnet for magnet protection and prevent the magnet from being displaced due to the centrifugal force. Those skilled in the art would realize that it would have been obvious to one skilled in the art to apply this teaching and further provide another strip for the opposite surface of the magnet because this is merely duplicating a disclosed element of the device.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the alternator with two strips interposed opposite surfaces of the magnet, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. ***St. Regis Paper Co. v. Bemis Co.,*** **193 USPQ 8.**

Regarding the U-shaped profile or the V-shaped profile of the groove, the prior art combination does disclose that the claw poles are configured with groove for accommodating the magnet therein in order to retain the magnet in place. Those skilled in the art would understand that configuring a groove with different profiles would be an engineering design choice based upon the size and shape of the magnet that being employed in the alternator.

Thus, it would have been an obvious matter of engineering design choice at the time the invention was made to configure the pole's groove with either an U-shaped profile or the V-shaped profile, since such a modification would have involved a mere change in the size or shape

of a component. A change in size or shape is generally recognized as being within the level of ordinary skill in the art. ***In re Rose,* 105 USPQ 237 (CCPA 1955).**

7. **Claims 9, 24** and **30** are rejected under 35 U.S.C. § 103(a) as being unpatentable over XP'444 and Ragaly, as rejected in the rejection against the base claims of claims 9 and 24, and in view of Yamada et al, USP 5734216.

The combination of XP'444 and Ragaly refs discloses the claimed invention, except for the added limitations of a layer of adhesive between the strip and the magnet.

However, Yamada et al disclose a magnet rotor for a dynamoelectric machine comprising a yoke (1) covering one circumferential face of a magnet (2); thus, the yoke is read as a strip covering the magnet's circumferential face that is oriented opposite to a shaft of the rotor; an adhesive layer (3), which is more flexible than the magnet, interposed between the magnet and the strip (1) (figs. 1-2A). Yamada et al teach that by providing an adhesive layer between the magnet and the yoke the magnet can be effectively prevented from being thermally damaged or broken even in used of high temperatures (col 2, lines 1-4).

Thus, it would have been an obvious matter of engineering design choice at the time the invention was made to modify the alternator by providing a layer of adhesive between the strip and the magnet, as taught by Yamada et al, because this would effectively prevent the magnet from being thermally damaged or broken even in used of high temperatures (col 2, lines 1-4).

8. **Claims 10-11 and 25-26** are rejected under 35 U.S.C. § 103(a) as being unpatentable over XP'444, Ragaly and Yamada, as rejected in the rejection against the base claims, and in view of Mitcham et al, USP 5877578.

The combination of XP'444 and Ragaly and Yamada refs discloses the claimed invention, except for the added limitations of the magnet including two separate parts bonded together by a layer of the adhesive material.

Mitcham et al, however, disclose a permanent magnet rotor (figs. 2-6) comprising: a plurality of separate magnet parts (20) that are bonded together. Mitcham et al teach that the magnets are subdivided to reduce the generation of eddy current in the magnet (col. 2 lines 29-31, 34-37).

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the alternator by configuring the magnet as a plurality of separate magnets bonded together by a layer of adhesive material, as taught by Mitcham et al, because this would provide a composite magnet that would reduce the generation of eddy current in the magnet (col. 2 lines 29-31, 34-37) resulting increasing effective performance of the alternator.

Regarding the adhesive material as the same adhesive material that is used for bonding the strip and the magnet, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the adhesive material for bonding the magnets together to be the same as adhesive material for bonding the strip and the magnet, since it has been held to be within

the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. ***In re Leshin,* 125 USPQ 416.**

Communication

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran Nguyen whose telephone number is (703) 308-1639.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-1782. The fax phone number for this Group is (703) 305-3431 (32).

TRAN NGUYEN
PRIMARY EXAMINER